

Application No. 10/623,255
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A solid electrolytic capacitor comprising:

a capacitor element including a porous sintered compact made of a valve action metal and having an anode lead, and wherein a dielectric, an electrolyte layer and a cathode ~~layers~~ layer are successively formed on a surface of the porous sintered compact;

an anode terminal connected to the anode lead of said capacitor element;

a cathode terminal connected to the cathode layer; and
a casing material covering said terminals and said capacitor element;

wherein:

said anode terminal includes a first plate piece having first and second ends, a second plate piece having third and fourth ends, and a third plate piece having fifth and sixth ends, said first, second and third plate pieces ~~being~~ are formed of continuous members,

said first and said second plate pieces are placed at an interior of said casing material,

said second and said third plate pieces are folded onto each other so as to be formed integrally.

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25 said third plate piece ~~having one~~ includes (i) a first
surface exposed to ~~the~~ an exterior of said casing material ~~and~~
~~forming which forms~~ a mounting surface defined by said the fifth
and sixth ends ~~communicated to each other and the other~~ and
(ii) a second surface opposing the exposed surface,

30 said first end of said first plate piece ~~having the first~~
~~end is~~ arranged in ~~proximity one of adjacent~~ to ~~or in butt on and~~
abutting said ~~other~~ second surface so as to intersect in the
~~shape of letter T with said third plate piece to form a T shape,~~

the said second end of said first plate piece ~~being is~~
extended and joined to the anode lead, and

35 said ~~second~~ first end and the fourth end ~~being are~~
respectively connected to the third end and the fifth end.

2. (Currently Amended) A The solid electrolytic capacitor
as defined in claim 1, wherein said second plate piece is
arranged nearer to said cathode layer than said third plate
piece.

3. (Currently Amended) A The solid electrolytic capacitor
as defined in claim 1, wherein said first plate, said second
plate and said third plate of said anode terminal ~~is~~ are formed
of a single metal plate.

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4. (Currently Amended) A The solid electrolytic capacitor as defined in claim 1, wherein said cathode terminal includes a fourth plate piece and a fifth plate piece ~~which have their each~~ having an inner ends end respectively connected to an
5 interconnection portion so as to form a step through the interconnection portion, such that the fourth plate piece and the fifth plate piece and to become are parallel to each other,
wherein one surface of said fourth plate piece being
is joined to said cathode layer, ~~while one and a~~ surface of said
10 fifth plate piece ~~remote~~ which is farthest from said cathode layer forms a mounting surface exposed to the exterior of said casing material.

5. (Currently Amended) A The solid electrolytic capacitor as defined in claim 4, wherein said fifth plate piece extends in ~~a direction of coming~~ away from said anode terminal with respect to said fourth plate.

6. (Currently Amended) A solid electrolytic capacitor comprising:

a capacitor element including a porous sintered compact made of a valve action metal and having an anode lead exposed to the
5 an exterior of one end thereof, and wherein a dielectric, an

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electrolyte layer and a cathode layer are successively formed on a surface of the porous sintered compact;

an anode terminal connected to the anode lead of said capacitor element;

10 a cathode terminal connected to the cathode layer; and
a casing material covering said terminals and said capacitor element,

wherein said anode terminal includes:

15 a first plate piece having a joint with said anode lead
~~as its one~~ a first end surface of the anode terminal and
extending from the joint toward a mounting surface in a
perpendicular direction with respect to the mounting surface;

20 a second plate piece bent at ~~about~~ substantially 90
degrees at the mounting surface so as to extend toward a cathode
of the capacitor; and

a third plate piece formed ~~in~~ such ~~a way~~ that a side of
said mounting surface is folded back toward an anode of the
capacitor by bending at ~~about~~ substantially 180 degrees;

25 wherein said third plate piece ~~extending~~ extends to an
end surface of said casing material toward the anode of the
capacitor and ~~being~~ is perpendicularly cut at ~~the~~ an end surface
of said casing material so as to define a cut section that forms
~~another~~ a second end surface of said anode terminal; and

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30 wherein the second and third plate pieces ~~being~~ are
pressure-welded to each other so as to become integral.

7. (Currently Amended) A The solid electrolytic capacitor as defined in claim 6, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by the pressure-welding.

5 8. (Currently Amended) A method of manufacturing a solid electrolytic capacitor, said solid electrolytic capacitor including: (i) a capacitor element containing a porous sintered compact made of a valve metal and having an anode lead, and
10 wherein a dielectric, an electrolyte layer and a cathode layer are successively formed on a surface of the porous sintered compact; (ii) an anode terminal connected to the anode lead of the capacitor element; (iii) a cathode terminal which is connected to the cathode layer; and (iv) a casing material covering the terminals and the capacitor element, said method comprising ~~the steps of:~~

preparing as the anode terminal a series of members in which a first plate piece is continuous to a third plate piece through a second plate piece;

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15 ~~forming the series of members into a shape in which~~
fabricating a T shape from the series of members by punching the
series of members based on a press work and a bending work, such
that the first and third plate pieces intersect in a to form
the T shape, of letter T in a state where the first plate piece
20 extends to said anode lead, and the T shape does not include a
connection part for connecting the first and third pieces; and
~~forming the second and third plate pieces into a state where~~
bending and crushing said second and third plate pieces to fold
said second and third plate pieces onto each other such that one
25 surface of the third plate piece is exposed to the an exterior of
the casing material as a mounting surface of the solid
electrolytic capacitor.

9. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein the second plate piece is arranged nearer to said cathode layer than said third plate piece.

10. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein said first plate, said second plate and said third plate of said anode terminal is are formed of a single metal plate.

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11. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein said cathode terminal ~~is formed of~~ includes a fourth plate piece and a fifth plate piece ~~which have~~ each having an inner ends
5 end respectively connected to an interconnection portion so as to form a step through the interconnection portion, such that the fourth plate piece and the fifth plate piece and to become
are parallel to each other,

wherein one surface of the fourth plate piece being
10 is joined to said cathode layer, ~~while one and a~~ surface of the fifth plate piece ~~remote~~ which is farthest from said cathode layer ~~is set as~~ forms a mounting surface exposed to the exterior of said casing material.

12. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 11, wherein said fifth plate piece is formed so as to extend ~~in a direction of~~
~~coming away~~ from said anode terminal with respect to said fourth plate.

13. (Currently Amended) A method of manufacturing a solid electrolytic capacitor including: (i) a capacitor element containing a porous sintered compact made of a valve action metal and having an anode lead exposed to the exterior of one end

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5 thereof, and wherein a dielectric, an electrolyte layer and a
cathode layer are successively formed on a surface of the porous
sintered compact; (ii) an anode terminal connected to the anode
lead of said capacitor element; a cathode terminal connected to
the cathode layer; (iii) and a casing material covering said
10 terminals and said capacitor element, said method comprising the
~~steps of:~~

forming as said anode terminal:

a first plate piece having a joint with said anode lead
as ~~its one~~ a first end surface of the anode terminal and
15 extending from the joint toward a mounting surface in a
perpendicular direction [[,]] with respect to the mounting
surface;

a second plate piece bent at ~~about~~ substantially 90
degrees at the mounting surface so as to extend toward a cathode
20 [[,]] of the capacitor; and

a third plate piece formed in such ~~a way~~ that a side of
said mounting surface is folded back toward an anode of the
capacitor by bending at ~~about~~ substantially 180 degrees;

extending said third plate piece to an end surface of said
25 casing material toward the anode of the capacitor;

cutting perpendicularly at ~~the~~ an end surface of said casing
material so as to define a cut section that forms ~~another a~~
second end surface of said anode terminal; and

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pressure-welding the second and third plate pieces to each
30 other so as to become integral.

14. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 13, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces ~~being~~ are joined to each other through the resin film by the pressure-welding.

15. (New) The solid electrolytic capacitor as defined in claim 1, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by pressure-welding.

16. (New) The method of manufacturing a solid electrolytic capacitor as defined in to claim 8, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by pressure-welding.